

Abstract

5 The present invention relates to methods for depositing zincate coatings on
aluminum and aluminum alloys comprising applying an immersion zincate coating
on an aluminum or aluminum alloy substrates, optionally followed by plating the
zincate coated aluminum or aluminum alloy substrate using an electroless or
electrolytic metal plating solution. The present invention also relates to an improved
aqueous alkaline zincate solution comprising hydroxide ions, zinc ions, nickel ions
10 and/or cobalt iron ions, copper ions, and at least one inhibitor containing one or
more nitrogen atoms, sulfur atoms, or both nitrogen and sulfur atoms provided said
nitrogen atoms are not present in an aliphatic amine or hydroxylamine.